

(c) depositing said amorphous particles onto a support; and
(d) either essentially simultaneously with said deposition or
subsequently thereto consolidating said deposit of amorphous particles into a non-
porous body;

the improvement comprising utilizing as said silicon-containing
compound in vapor form, a halide-free polymethylcyclosiloxane selected from the
group consisting of octamethylcyclotetrasiloxane, decamethylcyclopentasiloxane,
hexamethylcyclotrisiloxane, and mixtures thereof, whereby no halide-containing
vapors are emitted during the making of said non-porous body of high purity fused
silica glass.

45. (Amended) In a method for making a non-porous body of high
purety fused silica glass doped with at least one oxide dopant comprising the steps of:

(a) producing a gas stream containing a silicon-containing
compound in vapor form capable of being converted through thermal decomposition
with oxidation or flame hydrolysis to SiO_2 and a halide-containing compound in
vapor form capable of being converted through oxidation or flame hydrolysis to at
least one member of the group consisting of P_2O_5 and a metal oxide which has a
metallic component selected from Group IA, IB, IIA, IIB, IIIA, IIIB, IVA, IVB, VA,
and the rare earth series of the Periodic Table;

(b) passing said gas stream into the flame of a combustion
burner to form amorphous particles of fused SiO_2 doped with an oxide dopant;

(c) depositing said amorphous particles onto a support; and
(d) either essentially simultaneously with said deposition or
subsequently thereto consolidating said deposit of amorphous particles into a non-
porous body; the improvement comprising utilizing as said silicon-containing
compound in vapor form a halide-free polymethylcyclosiloxane, whereby no halide-
containing vapors from said silicon-containing compound are emitted during the
making of said non-porous body of high fused silica glass.

48. (Amended) In a method for making optical waveguide fibers of high purity fused silica glass doped with an oxide dopant comprising the steps of:

(a) producing a gas stream containing a silicon-containing compound in vapor form capable of being converted through thermal decomposition with oxidation or flame hydrolysis to SiO₂ and a halide containing compound in vapor form capable of being converted through oxidation or flame hydrolysis to at least one member of the group consisting of P₂O₅ and a metal oxide which has a metallic component selected from Group IA, IB, IIA, IIB, IIIA, IIIB, IVA, IVB, VA, and the rare earth series of the Periodic Table;

(b) passing said gas stream into the flame of a combustion burner to form amorphous particles of fused SiO₂ doped with an oxide dopant;

(c) depositing said amorphous particles onto a mandrel;

(d) consolidating said deposit of amorphous particles into a non-porous transparent glass body; and

(e) drawing waveguide fiber from said body; the improvement comprising utilizing as said silicon-containing compound in vapor form a halide-free polymethylcyclosiloxane, whereby no halide-containing vapors from said silicon-containing compound are emitted during the making of said optical waveguide fibers.

49. (Amended) In a method of making high purity fused silica glass through the outside vapor deposition process comprising the steps of:

(a) producing a gas stream containing a silicon-containing compound in vapor form capable of being converted through thermal decomposition with oxidation or flame hydrolysis of SiO₂;

(b) passing said gas stream into the flame of a combustion burner to form amorphous particles of fused SiO₂;

(c) depositing said amorphous particles onto a mandrel; and

(d) consolidating said deposit of amorphous particles into a non-porous, transparent glass body;

the improvement comprising utilizing as said silicon-containing compound in vapor form a halide-free polymethylcyclosiloxane selected from the group consisting of octamethylcyclotetrasiloxane, decamethylcyclopentasiloxane, hexamethylcyclotrisiloxane, and mixtures thereof, whereby no halide-containing

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vapors from said silicon-containing compound are emitted during the making of said high purity fused silica glass.